

Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

June 29, 2016

Ms. Robin Feller JRM Environmental, Inc. PO Box 926 Brownsburg, IN 461120926

RE: Project: Duke Edwardsport

Pace Project No.: 50147471

Dear Ms. Feller:

Enclosed are the analytical results for sample(s) received by the laboratory on June 15, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Karen Fullmer

Karen Jullmer

karen.fullmer@pacelabs.com

Project Manager

Enclosures





(614)486-5421

Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

CERTIFICATIONS

Project: Duke Edwardsport

Pace Project No.: 50147471

Indiana Certification IDs

7726 Moller Road, Indianapolis, IN 46268 Illinois Certification #: 200074 Indiana Certification #: C-49-06 Kansas/NELAP Certification #:E-10177 Kentucky UST Certification #: 0042 Kentucky WW Certification #:98019

Ohio VAP Certification #: CL-0065 Oklahoma Certification #: 2014-148 Texas Certification #: T104704355-15-9 West Virginia Certification #: 330 Wisconsin Certification #: 999788130 USDA Soil Permit #: P330-10-00128

REPORT OF LABORATORY ANALYSIS



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SAMPLE SUMMARY

Project: Duke Edwardsport

Pace Project No.: 50147471

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50147471001	Field Blank	Water	06/15/16 11:45	06/15/16 15:40
50147471002	501	Water	06/15/16 11:50	06/15/16 15:40
50147471003	501	Water	06/15/16 11:55	06/15/16 15:40
50147471004	501	Water	06/15/16 11:55	06/15/16 15:40



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SAMPLE ANALYTE COUNT

Project: Duke Edwardsport

Pace Project No.: 50147471

Lab ID	Sample ID	Method	Analysts	Analytes Reported
50147471001	Field Blank	EPA 1631E	WJW	1
50147471002	501	EPA 1631E	WJW	1
50147471003	501	SM 2540C	MDG	1
50147471004	501	EPA 200.8	CAW	2



06/22/16 15:20 06/23/16 09:10 7439-97-6

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ANALYTICAL RESULTS

Project:

Mercury

Duke Edwardsport

Pace Project No.:

Date: 06/29/2016 03:01 PM

50147471

Sample: Field Blank Lab ID: 50147471001 Collected: 06/15/16 11:45 Received: 06/15/16 15:40 Matrix: Water DF CAS No. **Parameters** Results Units Report Limit Prepared Analyzed Qual 1631E Mercury, Low Level Analytical Method: EPA 1631E Preparation Method: EPA 1631E ND 0.50

ng/L



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ANALYTICAL RESULTS

Project:

Duke Edwardsport

Pace Project No.:

Date: 06/29/2016 03:01 PM

50147471

Sample: 501 Lab ID: 50147471002 Collected: 06/15/16 11:50 Received: 06/15/16 15:40 Matrix: Water CAS No. **Parameters** Results Units Report Limit DF Prepared Analyzed Qual Analytical Method: EPA 1631E Preparation Method: EPA 1631E

1631E Mercury, Low Level

ND 0.50 Mercury ng/L 06/22/16 15:20 06/23/16 10:11 7439-97-6



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ANALYTICAL RESULTS

Project:

Date: 06/29/2016 03:01 PM

Duke Edwardsport

Pace Project No.:

50147471

Sample: 501	Lab ID: 50	0147471003	Collected: 06/15/1	6 11:55	Received: 06	6/15/16 15:40 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Mo	ethod: SM 254	40C					
Total Dissolved Solids	ND	mg/L	10.0	1		06/20/16 10:57	•	



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ANALYTICAL RESULTS

Project: Duke Edwardsport

Pace Project No.: 50147471

Date: 06/29/2016 03:01 PM

Sample: 501	Lab ID: 501	47471004	Collected: 06/15/1	6 11:55	Received: 06	6/15/16 15:40 M	fatrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS	Analytical Meth	nod: EPA 200	0.8 Preparation Met	hod: EP	A 200.8			
Arsenic Selenium	ND ND	ug/L ug/L	1.0 1.0	1 1		06/25/16 03:18 06/27/16 18:40		



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QUALITY CONTROL DATA

Project: Duke Edwardsport

Pace Project No.: 50147471

QC Batch: CVFS/1410 Analysis Method: EPA 1631E
QC Batch Method: EPA 1631E Analysis Description: 1631E Mercury

Associated Lab Samples: 50147471001, 50147471002

METHOD BLANK: 1569186 Matrix: Water

Associated Lab Samples: 50147471001, 50147471002

Parameter Units Result Limit Analyzed Qualifiers

Mercury ng/L ND 0.50 06/23/16 08:26

METHOD BLANK: 1569187 Matrix: Water

Associated Lab Samples: 50147471001, 50147471002

ParameterUnitsBlank Reporting ResultReporting LimitAnalyzedQualifiersMercuryng/LND0.5006/23/16 10:04

METHOD BLANK: 1569188 Matrix: Water

Associated Lab Samples: 50147471001, 50147471002

ParameterUnitsBlank Reporting ResultReporting LimitAnalyzedQualifiersMercuryng/LND0.5006/23/16 11:39

LABORATORY CONTROL SAMPLE: 1569189

Date: 06/29/2016 03:01 PM

LCS LCS % Rec Spike % Rec Parameter Conc. Result Limits Qualifiers Units Mercury 4.90 98 80-120 ng/L

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1569190 1569191

MSD MS 50147328004 Spike Spike MS MSD MS MSD % Rec Max Parameter % Rec **RPD** RPD Units Result Conc. Conc. Result Result % Rec Limits Qual 1.22 3.50 4.12 91 71-125 16 24 Mercury ng/L 2.5 2.5 116

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1569192 1569193

MS MSD MS 50147471002 Spike Spike MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qual Mercury ng/L ND 2.5 2.5 2.78 2.74 111 110 71-125 24

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

QUALITY CONTROL DATA

Project:

Duke Edwardsport

Pace Project No.:

50147471

QC Batch: QC Batch Method: MPRP/21294

EPA 200.8

Analysis Method:

EPA 200.8

Analysis Description:

ND

Matrix: Water

200.8 MET

METHOD BLANK: 1567948

Associated Lab Samples:

Associated Lab Samples: 50147471004

50147471004

Blank

Reporting

Parameter

Result ND Limit Analyzed 1.0 06/24/16 17:35

LCS

1.0

LABORATORY CONTROL SAMPLE:

Parameter

1567949

Units

ug/L

ug/L

Spike Conc. 40

40

LCS Result 37.9

% Rec 95 % Rec Limits

Qualifiers

Qualifiers

Arsenic Selenium

Date: 06/29/2016 03:01 PM

Arsenic

Selenium

Units ug/L ug/L

85-115 36.8 92 85-115

06/24/16 17:35

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



SM 2540C

Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

QUALITY CONTROL DATA

Analysis Method:

Project: Duke Edwardsport

Pace Project No.: 50147471

QC Batch: WET/29850

QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 50147471003

METHOD BLANK: 1566141 Matrix: Water

Associated Lab Samples: 50147471003

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Total Dissolved Solids mg/L ND 10.0 06/20/16 10:56

LABORATORY CONTROL SAMPLE: 1566142

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers **Total Dissolved Solids** mg/L 300 275 92 80-120

SAMPLE DUPLICATE: 1566143

50147503001 Dup Max **RPD RPD** Parameter Units Result Result Qualifiers 1540 10 **Total Dissolved Solids** 1560 1 mg/L

SAMPLE DUPLICATE: 1566144

Date: 06/29/2016 03:01 PM

50147552002 Dup Max RPD RPD Parameter Units Result Result Qualifiers 474 **Total Dissolved Solids** mg/L 473 0 10

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



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QUALIFIERS

Project: Duke Edwardsport

Pace Project No.: 50147471

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Date: 06/29/2016 03:01 PM



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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Duke Edwardsport

Pace Project No.: 50147471

Date: 06/29/2016 03:01 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50147471001	Field Blank	EPA 1631E	CVFS/1410	EPA 1631E	CVFS/1411
50147471002	501	EPA 1631E	CVFS/1410	EPA 1631E	CVFS/1411
50147471004	501	EPA 200.8	MPRP/21294	EPA 200.8	ICPM/3257
50147471003	501	SM 2540C	WET/29850		



CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:	Section B Required Project Information:	gou:	.	Section C	, ;	7.4		Page:) of		
Company The Contract	Report To: De M	735	= 4	Attention:	atton:	01/20	<u> </u>		~	2032737	737	
Address: B Rownships				Company Nan	3		REGULATORY AGENCY	RY AGENCY				
	7			Address:			TAMPDES	F GROUF	GROUND WATER		DRINKING WATER	
	Purchase Order No.:		<u>a. c.</u>	Pace Quote Reference:			TSU	T RCRA		L	OTHER	1
Phone: Fax:	Project Name: D	ところとを	esso a	Perse Project Manager:	6		Site Location					
Requested Due Date/TAT:	Project Number:			ace Profile #:	2		STATE					Treff.
						Requested	Analysis Filtered (Y/N)	red (X/N)				1
Section D Required Clent Information MA	SS CC TC (fiel of c	соглестер			Preservatives	IN/A			〜 T	17471105	1471.	3
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Sample IDs MUST BE UNIQUE	S R CODE			MIATNC Bevie		120T 212 11 15 1 2 (Ohlodne	,¥		
# (N31:1	SAMPLE	DATE TIME DATE	E M BJGMA8	H°SO⁴ Nublese # OE CC	Methand Na ₂ S ₂ O HCI HNO ₃	Other			leubises			
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12 ADDITIONAL COMMENTS	RELINGUISH	RELINQUISHED BY / AFFILIATION	DAITE	TIME	Accep	ACCEPTED BY / AFFILIATION	DATE			SAMPLE CONDITIONS	SNOTHON	
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		SIGNATU	RE of SAMPLER.	3	124	DATE Signed (WIM/DD/YY):	6/15/16		_	eol Cu) Iqms2	
*Important Note: By signting this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.	accepting Pace's NET 30 day paymen	t terms and agreeing to late charg	jes of 1.5% per monthi fo	r any involces r	of pald within 30 days.				F-ALL-O-0	F-ALL-Q-020rev.07, 15-May-2007		7

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Face Analytical Client Name	ZJRM_			Project #	S0147471
		. —			•
Courier: Fed Ex UPS USPS Clier	nt LCommercia	lPace	Other		
Tracking #:	+				Date/Time 5035A kits
Custody Seal on Cooler/Box Present: yes	no Se	eals intact:	_ yes Z	De	placed in freezer
Packing Material: Bubble Wrap Bubble	Bags None	Othe	•		
Thermometer 123456 ABCDE	Type of Ice: (Net Blue	None	Samples on ice, c	ooling process has begun
Cooler Temperature 0,6°C/0,6°C (Initial/Corrected)	Ice Visible in	Sample Co	ontainers:	yes no	als of person examining
Temp should be above freezing to 6°C		Comm	ents:	contents:	47 6 15 11b
Are samples from West Virginia?	□Yes ZNo	1.	•		1 N
Document any containers out of temp.					
Chain of Custody Present:	Yes DNo D]N/A 2.			· - · - · ·
Chain of Custody Filled Out:	ZYes □No □	In/A 3.	· · · · · · · · · · · · · · · · · · ·		
Chain of Custody Relinquished:	f	3N/A 4.			
Sampler Name & Signature on COC:	Yes □No □]N/A 5.		***	
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐	IN/A 6.			
Rush Turn Around Time Requested:	□Yes 万No □	N/A 7.		,	
Containers Intact:	✓Yes □No □]N/A 8.		····	
Sample Labels match COC:	Yes 🗆 No 🗆]n/a 9.			
-Includes date/time/ID/Analysis					
All containers needing acid/base pres. have been checked?	Øyes □No □	_{]N/A} 10 (Circle HNO3	H2SO4 Na	OH NaOH/ZnAc
exceptions: VOA, coliform, TOC, O&G	•				
All containers needing preservation are found to be in correcommendation (<2, >9, >12) unless otherwise noted.	npliance with EPA				•
Residual Chlorine Check (SVOC 625 Pest/PCB 608	3)	11.	Present	Absent	
Residual Chlorine Check (Total/Amenable/Free Cy	anide)	12.	Present	Absent	
Headspace in VOA Vials (>6mm):		N/A 13			
Headspace Wisconsin Sulfide	□Yes □No	14			
Trip Blank Present:	□Yes □No Z	N/A 15			
Trip Blank Custody Seals Present	□Yes □No	IN/A			
Project Manager Review					4
Samples Arrived within Hold Time:	Ves □No □]N/A 15.			
Sufficient Volume:	Yes DNo D	N/A 16.			
Correct Containers Used:	Yes DNo D]N/A 17.			
Client Notification/ Resolution:				Field Data Requir	ed? Y / N
Person Contacted:	D	ate/Time: _			
Comments/ Resolution:			· · · · · · · · · · · · · · · · · · ·		
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					<u> </u>
Project Manager Review:	V.A			Date:	Tal 11/2/11/2

COC PAGE 1 of 20527 CLIENT:

Sample Container Count

Project # 50/4747/

pH <2 pH >9 pH>12 DG9H AG1U WGFU AG0U R 4/6 BP2N BP2U BP2S BP3N BP3U BP3S AG3S AG1H BP3C BP1U SP5T AG2U Sample Line Item 10 12 2 3 œ 6 ĸ ဖ

	Container Codes		•				
DG9H	DG9H 40mL HCL amber voa vial	AGOU	AGOU 100mL unpreserved amber glass	BP1N	BP1N 1 liter HNO3 plastic	DG9P	DG9P 40ml TSP amber vial
AG1U	AG1U 1liter unpreserved amber glass	AG1H	AG1H 1 liter HCL amber glass	BP1S	BP1S 1 liter H2SO4 plastic	DG9S	DG9S 40ml H2SO4 amber vial
WGFU	WGFU 4oz clear soil jar	AG1S	AG1S 1 liter H2SO4 amber glass	BP1U	BP1U 1 liter unpreserved plastic	DG9T	DG9T 40ml Na Thio amher vial
æ	terra core kit	AG1T	1 liter Na Thiosulfate amber glass	BP1Z	BP1Z 1 liter NaOH. Zn. Ac	DG9[]	DG9[1] 40ml unpreserved ambervial
BP2N	BP2N 500mL HNO3 plastic	AG2N	AG2N 500mL HNO3 amber glass	BP2A	BP2A 500mL NaOH, Asc Acid plastic	SP5T	SP5T 120ml Coliform Na Thiosulfate
BP2U	BP2U 500mL unpreserved plastic	AG2S	AG2S 500mL H2SO4 amber glass	BP20	BP2O 500mL NaOH plastic	JGFU	JGFU 40z unpreserved amber wide
BP2S	BP2S 500mL H2SO4 plastic	AG2U	500mL unpreserved amber glass	BP2Z	BP2Z 500mL NaOH, Zn Ac	ר	Summa Can
BP3N	BP3N 250mL HNO3 plastic	AG3U	AG3U 250mL unpreserved amber glass	AF.	AF Air Filter	VG9H	VG9H 40ml HCl clear vial
BP3U	BP3U 250mL unpreserved plastic	ВС1Н	BG1H 1 liter HCL clear glass	ВРЗС	BP3C 250mL NaOH plastic	VG9T	VGGT 40ml Na Thio clear vial
BP3S	BP3S 250mL H2SO4 plastic	BG1S	BG1S 1 liter H2SO4 clear glass	BP3Z	BP3Z 250mL NaOH. Zn Ac plastic	VG9U	VG9U 40ml innreserved clear vial
AG3S	250mL H2SO4 glass amber	BG1T	BG1T 1 liter Na Thiosulfate clear glass	O	C Air Cassettes	VSG	VSG Headspace senta vial & HCI
AG1S	AG1S 1 liter H2SO4 amber glass	BG1U	BG1U 1 liter unpreserved glass	DG9B	lfate amber vial	WGFX	WGFX 402 wide iar w/hexane wine
BP1U	BP1U 1 liter unpreserved plastic	BP1A	BP1A 1 liter NaOH, Asc Acid plastic	DG9M		ZDIC	7Pl C. Zinlor Ban